

application, he will contact Applicants' representatives to set up a further interview in the above-captioned patent application. In response to the Office Action mailed October 1, 2002, and the Advisory Action mailed January 14, 2003, and accompanying a Request for Continued Examination filed February 11, 2003, Applicants respectfully request that the Examiner reconsider the above-captioned patent application in view of the following remarks.

### REMARKS

1. Rejections

Claims 1-6 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Japanese Patent Publication No. JP-A-7-280484 ("JP-'484). Applicants respectfully disagree.

2. 35 U.S.C. § 102(b)

Claims 1-6 stand rejected as allegedly anticipated by JP-'484. "A claim is anticipated if and only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP 2131. The Office Action and Advisory Action allege that JP-'484 describes each and every element as set forth in claims 1-6. Specifically, the Advisory Action asserts that in JP-'484, **Fig. 6** "clearly depicts that the overlapping portion is not the same as the connecting portion. In fact, the extension lines of L/2 of Figure 13 [of Applicant's application] do not line up with the intersection of the flat portion and inclined portions of the foreground waving strip. Therefore, [in JP-'484,] as permissibly gleaned from the drawings, the connecting portion is less than or equal to the strip thickness." Advisory Action, Page 3, Lines 10-13. Applicants respectfully disagree.

Specifically, Applicants' claims 1 and 3 describe a fin for a heat exchanger comprising a plurality of waving strips, in which "adjacent waving strips are connected at connecting portions between said first flat portions of said adjacent waving strips and between said second flat portions of said adjacent waving strips, [wherein] a length (T) of each connecting portion in said longitudinal direction of each waving strip is less than or equal to about a thickness (t) of a plate forming each waving strip." (Emphasis added.) As described in Applicants' specification, a rolling process may be employed to manufacture Applicants' claimed fin because the connecting portion (T) is less than or equal to the plate thickness (t). In contrast, when the connecting length (T) is greater than the plate thickness (t), even if the plate is forcibly bent, the waving strips will become deformed during the manufacturing process. See,

e.g., Appl'n, Page 9, Lines 27-30. As such, Applicants' claimed invention requires that the connecting length (T) be less than or equal to about the plate thickness (t). Moreover, although the adjacent waving strips may overlap for a length which is greater than plate thickness (t), the adjacent waving strips only may be physically connected to each other over a portion of such overlapping length, i.e., only may be physically connected to each other at connection portions (T), the length of which is less than or equal to plate thickness (t). See, e.g., Appl'n, Page 5, Lines 13-18; and **Fig. 5** (emphasis added.) Specifically, in Applicants' claimed invention, the adjacent fins only are physically connected to each other when flat portions of both fins intersect each other. (Emphasis added.) As such, the adjacent fins are not physically connected to each other when (1) an inclined portion of one of the adjacent fins overlaps a flat portion of the other adjacent fins, or (2) an inclined portion of one of the adjacent fins overlaps an inclined portion of the other fin. (Emphasis added.)

In contrast, JP-'484 is addressed in Applicants' Background of the Invention Section. JP-'484 describes a plurality of waving strips 102 and 103 which are arranged adjacent to, and longitudinally offset from, each other. Adjacent strips 102 and 103 overlap with each other at adjacent raised portions and adjacent depressed portions. Adjacent strips 102 and 103 also are physically connected to each other throughout the entire overlapping length of adjacent strips 102 and 103. Specifically, the connection length of these connections portions is about  $L/2$ , in which L is the length of each raised portion, and also is the length of each depressed portion. As such, the connection length of the connection portions described in JP-'484 is about  $1/2$  of the length of the raised portion, which is substantially greater than a thickness of the waving strips 102 and 103. (Emphasis added.) Moreover, because the connection portion is substantially greater than the thickness of the waving strips 102 and 103, the waving strips 102 and 103 cannot be formed by a rolling method without deforming the waving strips 102 and 103. Consequently, waving strips 102 and 103 must be formed by a die press fitting method. See, e.g., Appl'n, Page 2, Lines 8-31.

As described above, the Advisory Action asserts that in JP-'484, **Fig. 6** "clearly depicts that the overlapping portion is not the same as the connecting portion. In fact, the extension lines of  $L/2$  of Figure 13 [of Applicant's application] do not line up with the intersection of the flat portion and inclined portions of the foreground waving strip. Therefore, [in JP-'484,] as permissibly gleaned from the drawings, the connecting portion is less than or

equal to the strip thickness.” Advisory Action, Page 3, Lines 10-13. Moreover, in the drawing from JP-‘484 which the Examiner included in the Advisory Action, the entire overlapping length between adjacent fins has been cross-hatched in red ink, and it appears that the Advisory Action asserts that the physical connection between the adjacent fins only occurs when the flat portions overlap, i.e., for only a portion of the entire length of the cross-hatched area. Nevertheless, Applicants maintain that unlike Applicants’ claimed invention, in JP-‘484 the adjacent fins are physically connected to each other for the entire area which is cross-hatched in red ink, and that the length of such area cross-hatched in red ink clearly is greater than the thickness of the fins, e.g., in Fig. 6 of JP-‘484, the thickness of the fins is less than 2/16 of an inch, and the length of the area cross-hatched in red ink is greater than 4/16 of an inch. (Emphasis added.)

Specifically, as described above, in Applicants’ claimed invention, the adjacent fins only are physically connected to each other when flat portions of both fins intersect each other. (Emphasis added.) As such, the adjacent fins are not physically connected to each other when (1) an inclined portion of one of the adjacent fins overlaps a flat portion of the other adjacent fins, or (2) an inclined portion of one of the adjacent fins overlaps an inclined portion of the other fin. (Emphasis added.) Consequently, Applicants’ adjacent waving strips only are physically connected to each other over a portion of their overlapping length. Moreover, the length of this connection portion is less than or equal to the thickness of the fins. Nevertheless, in JP-‘484, the adjacent fins are physically connected to each other when (1) flat portions of both fins intersect each other, (2) an inclined portion of one of the adjacent fins overlaps a flat portion of the other adjacent fins, and (3) an inclined portion of one of the adjacent fins overlaps an inclined portion of the other fin. (Emphasis added.) Consequently, the adjacent waving strips described in JP-‘484 are physically connected to each other over their entire overlapping length. Moreover, the overlapping length of the adjacent waving strips is greater than the thickness of the fins. Thus, JP-‘484 fails at least to describe a fin for a heat exchanger comprising a plurality of waving strips, in which “adjacent waving strips are connected at connecting portions between said first flat portions of said adjacent waving strips and between said second flat portions of said adjacent waving strips, [wherein] a length (T) of each connecting portion in said longitudinal direction of each waving strip is less than or equal to about a thickness (t) of a plate forming each waving strip,” as described in original claims 1 and 3.

Moreover, Applicants are enclosing an English-language translation of JP-'484, which Applicants' representatives independently obtained from a translation service. Based on the English-language translation of JP-'484, it is believed that JP-'484 does not discuss the length over which the adjacent fins are physically connected to each other. Applicants' maintain that in view of the foregoing discussion, the Office Action and the Advisory Action each fail satisfy its burden in establishing that JP-'484 describes each and every element as set forth in claims 1 and 3. Specifically, because JP-'484 appears not to discuss the length over which the adjacent fins are physically connected to each other, Applicants believe that the Office Action and the Advisory Action each impermissibly rely on Applicants' disclosure to assert that the adjacent fins in JP-'484 only are physically connected at overlapping flat portions, and are not physically connected when an inclined portion of one of the adjacent fins overlaps a flat portion of the other adjacent fins, or when an inclined portion of one of the adjacent fins overlaps an inclined portion of the other fin. Therefore, Applicants respectfully request that the Examiner withdraw the anticipation rejections of claims 1 and 3 in view of JP-'484.

Claims 2 and 4-6 depend from original claims 1 and 3, respectively. Therefore, Applicants respectfully request that the Examiner also withdraw the anticipation rejections of claims 2 and 4-6 in view of JP-'484.

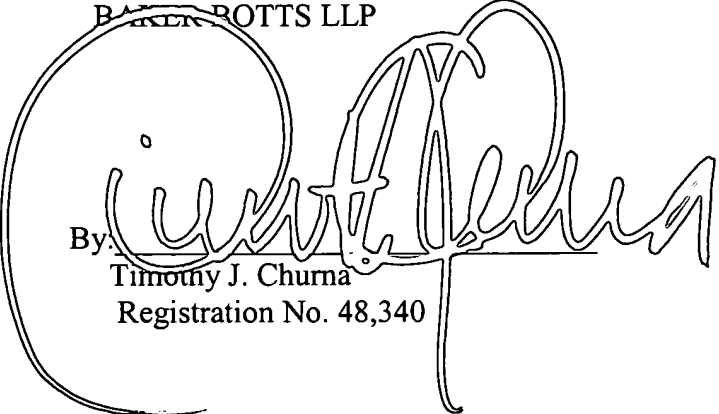
#### CONCLUSION

Applicants respectfully submit that this application is in condition for allowance, and such disposition is earnestly solicited. If the Examiner believes that an interview with Applicants' representatives, either in person or by telephone, would expedite prosecution of this application, we would welcome such an opportunity. Applicants are enclosing check in the amount of \$750 covering the requisite Request for Reexamination fee. Nevertheless, in the event of any variance between the fees determined by Applicants and those determined by the U.S.

Patent and Trademark Office, please charge any such variance to the undersigned's Deposit Account No. 02-0375.

Respectfully submitted,

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